

II. AMENDMENTS TO THE CLAIMS

The following listing of claims replaces all prior versions, and listings, of claims in the application:

1. (Currently Amended) A semiconductor module, comprising:

a semiconductor chip;

a substrate; and

an interposer structure having a connection only to the semiconductor chip and to the substrate, wherein the interposer structure includes an elastomeric, compliant material having metallurgical through connections having a predetermined shape and a discrete metallurgical core, wherein the metallurgical through connections form the only connections to the semiconductor chip and to the substrate.

2. (Previously Presented) The semiconductor module of claim 1, wherein the elastomeric, compliant material has the metallurgical through connections being one of the group consisting of: embedded and positioned therein.

3. (Original) The semiconductor module of claim 1, wherein the predetermined shape is selected from the group consisting of spherical, elongate, c-shaped, s-shaped and ellipsoid.

4. (Previously Presented) The semiconductor module of claim 1, further comprising support posts positioned adjacent to and in non-contact with the interposer structure.
5. (Original) The semiconductor module of claim 4, wherein the support posts support a heat spreader over the semiconductor chip.
6. (Original) The semiconductor module of claim 1, further comprising underfill for sealing the interposer structure between the semiconductor chip and the substrate.
7. (Original) The semiconductor module of claim 1, wherein the metallurgical through connections of the interposer structure electrically connect an under bump metallization of the semiconductor chip to a top surface metallization of the substrate.
8. (Original) The semiconductor module of claim 7, wherein the metallurgical through connections are soldered to at least one of the under bump metallization or the top surface metallization.
9. (Currently Amended) The semiconductor module of claim 1, wherein the metallurgical through connections cores are coated with gold.
10. (Currently Amended) A semiconductor module, comprising:

a semiconductor chip having an under bump metallization;
a substrate having a top surface metallization; and
an interposer structure only in contact with the under bump metallization and the top surface metallization, wherein the interposer structure comprises an elastomeric, compliant material that includes metallurgical through connections having a predetermined shape and a discrete metallurgical core, wherein the metallurgical through connections form the only connections to the under bump metallization and to the top surface metallization.

11. (Original) The semiconductor module of claim 10, wherein the predetermined shape is selected from the group consisting of spherical, elongate, c-shaped, s-shaped and ellipsoid.

12. (Currently Amended) The semiconductor module of claim 10, further comprises support posts positioned adjacent to and in non-contact with the interposer structure for supporting a heat spreader over the semiconductor chip.

13. (Original) The semiconductor module of claim 10, further comprising underfill for sealing the interposer structure between the semiconductor chip and the substrate.

14. (Original) The semiconductor module of claim 10, wherein the metallurgical through connections are soldered to at least one of the under bump metallization or the top surface metallization.

15. (Currently Amended) The semiconductor module of claim 10, wherein the metallurgical through connections cores are coated with gold.

16. (Currently Amended) A method for forming a semiconductor module, comprising:
embedding metallurgical through connections having discrete metallurgical cores
within an elastomeric, compliant material to form an interposer structure; and
positioning the interposer structure between a semiconductor chip and a substrate
to electrically connect and only contact the semiconductor chip to the substrate, wherein
the metallurgical through connections form the only contact to the semiconductor chip
and to the substrate.

17. (Original) The method of claim 16, wherein the metallurgical through connections electrically connect an under bump metallization of the semiconductor chip to a top surface metallization of the substrate.

18. (Original) The method of claim 17, further comprising soldering the interposer structure to at least one of the under bump metallization or the top surface metallization.

19. (Currently Amended) The method of claim 16, further comprising positioning support posts adjacent to and in non-contact with the interposer structure to support a heat spreader over the semiconductor chip.

20. (Original) The method of claim 16, further comprising sealing the interposer structure between the semiconductor chip and the substrate with underfill.